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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,225	03/19/2001	Keiji Ono	Q63523	6895

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EXAMINER

CLEVELAND, MICHAEL B

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/810,225

Applicant(s)

ONO ET AL

Examiner

Michael Cleveland

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-14 is/are pending in the application.
- 4a) Of the above claim(s) 6-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 080703. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Claims 6-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper No. 08/07/2003.

Claim Rejections - 35 USC § 112

2. The rejections under 35 USC 112, 2nd paragraph are withdrawn in view of Applicant's amendments.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Sigai (U.S. Patent 4,825,124, hereafter '124).

'124 teaches mixing a manganese-doped zinc silicate phosphor with an aluminum oxide precursor and calcining to form an aluminum oxide coating (col. 21, line 44-col. 22, line 24).

The precursor may be an acetylacetonate (i.e., a coupling agent with a 1,3-diketone structure) (col. 3, lines 40-49, col. 4, lines 31-53).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasenga et al. (U.S. Patent 4,946,707, hereafter '707) in view of Mizuta et al. (U.S. Patent 5,039,654, hereafter '654).

Art Unit: 1762

Claims 1-3: '707 teaches mixing a manganese-doped zinc silicate phosphor with aluminum nitrate and firing (i.e., calcining) to form an aluminum oxide coating (col. 2, lines 46-68).

'707 does not teach the use of an aluminum 1,3-diketone coupling agent as the precursor. However, the equivalence of nitrates to other precursors, including acetylacetonates (which have a 1,3-diketone structure), as precursors to form metal oxides is well known. See, for instance, '654, col. 2, lines 31-36. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used an aluminum acetylacetonate instead of aluminum nitrate with a reasonable expectation of success and with the expectation of similar results because acetylacetonates are known equivalents to nitrates as metal oxide precursors.

Claim 4: The concentration of aluminum is critical for sufficient absorption of the aluminum (col. 2, lines 11-12). The concentration is modified by changing weight of precursor in the solutions to which the same amount of phosphor is added (i.e., by controlling the ratio of the weight of the precursor to that of the phosphor) (col. 2, lines 45-68). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have optimized the weight ratio of aluminum acetylacetonate to the phosphor through routine in order to have assured sufficient adsorption.

Response to Arguments

7. Applicant's arguments filed 8/7/2003 have been fully considered but they are not persuasive.

Applicant argues that Sigai, Example 1, uses aluminum oxide C. The argument is unconvincing because it does not address the full teachings of the reference. Example 1 teaches the use of trimethyl aluminum as the aluminum oxide precursor, but col. 3, lines 40-49 teaches that other precursors, such as aluminum acetylacetonates, may be used as the precursor instead.

Applicant argues that there is no motivation to combine '707 and '654. The argument is unconvincing because the selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07. '654 teaches that 1,3-diketones and nitrates are both suitable as precursors to metal oxide coatings. (See also

Art Unit: 1762

Tanitsu '884 and Sigai '124, as noted in the prior office action, for further evidence of the conventional use of metal diketones as metal oxide precursors.)

In response to applicant's argument that Mizuta is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Mizuta is reasonably pertinent to the particular problem with which applicant was concerned, that is, the decomposition of metal precursor compounds to form metal oxides.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chau (U.S. Patent 5,196,229) and Petersen (U.S. Patent 5,747,100) are cited for their teachings regarding the coating of phosphors. Tanitsu (U.S. Patent 5,156,884) is cited for its teachings regarding decomposition of diketone precursors to form metal oxides. Ramirez de Aquedelo (U.S. Patent 4,937,218, col. 1, lines 35-43) is cited for its teachings regarding 1,3-diketone structure.

Art Unit: 1762

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (703) 308-2331. The examiner can normally be reached on 8-5:30 M-F, with alternate Mondays off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 306-3186 for regular communications and (703) 306-3186 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



MBC

October 3, 2003


SHRIVE P. BECK
SUPERVISORY PATENT EXAMINER
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